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Persistent spatial clusters of prescribed porcine antimicrobials

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Repeated multivariate scanning statistics revealed **three persistent clusters (551 farms)** in the amount of consumed antimicrobials. **Production type, herd type and herd size were found to explain some of the clustering.**

Emergence of antimicrobial resistance has increased the public awareness of the use of veterinary antimicrobials. It is hypothesized that farms with a persistently high antimicrobial use are spatially clustered, due to the clustering of disease, demographic characteristics, management and medication practices.

The objective of this study was to identify the geographical distribution of Danish indoor commercial pig farms prescribing significantly more antimicrobials throughout the two years study period. A register based cross-sectional study with repeated measurements on antimicrobial use from 6,143 Danish indoor commercial pig producing farms was executed.

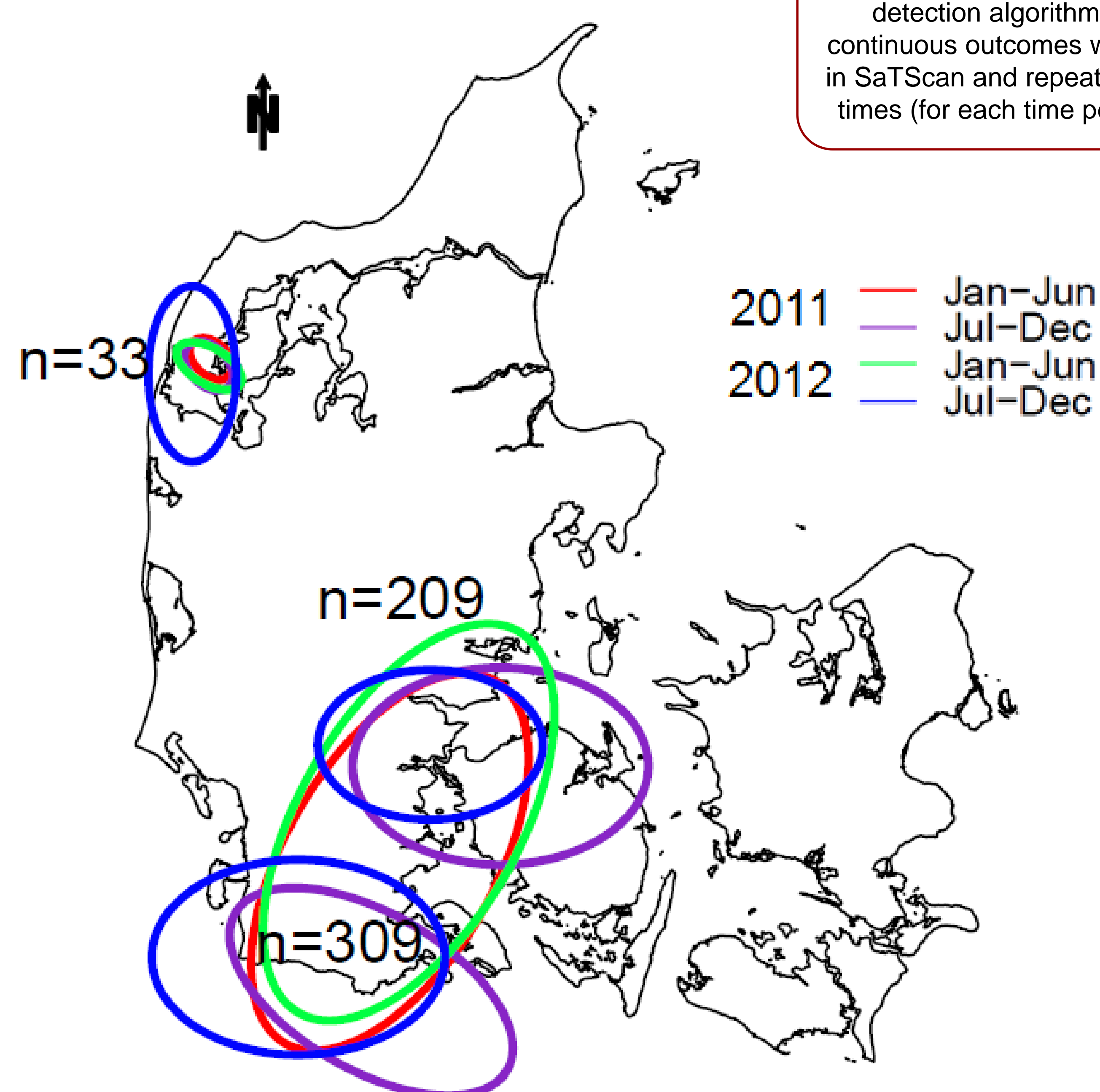
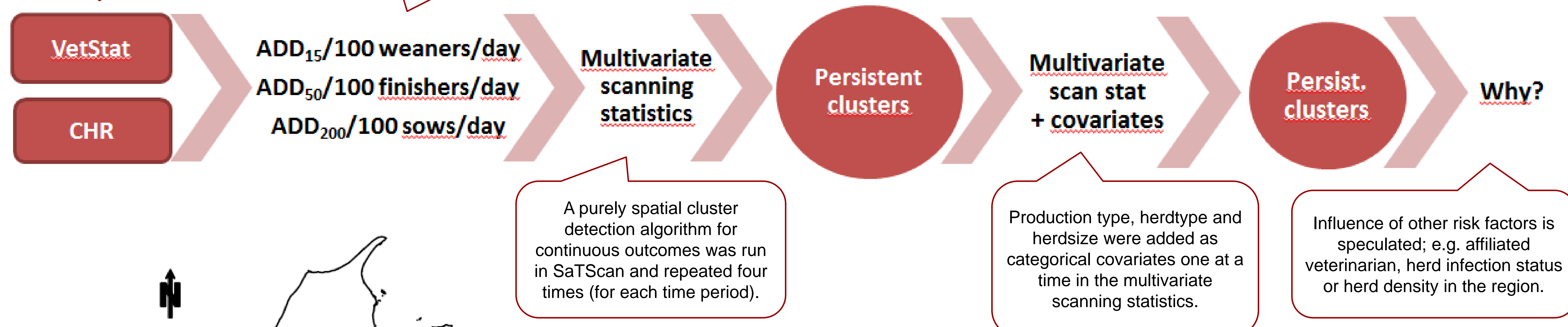


Data from 2012-2013 were extracted from the national registers; VetStat (prescribed antimicrobials) and Central Husbandry Register, CHR (herd characteristics)

Antimicrobials prescribed for each age group of swine at the farm were aggregated at a six-month scale and standardized as: Animal Daily Doses/100 swine registered /day

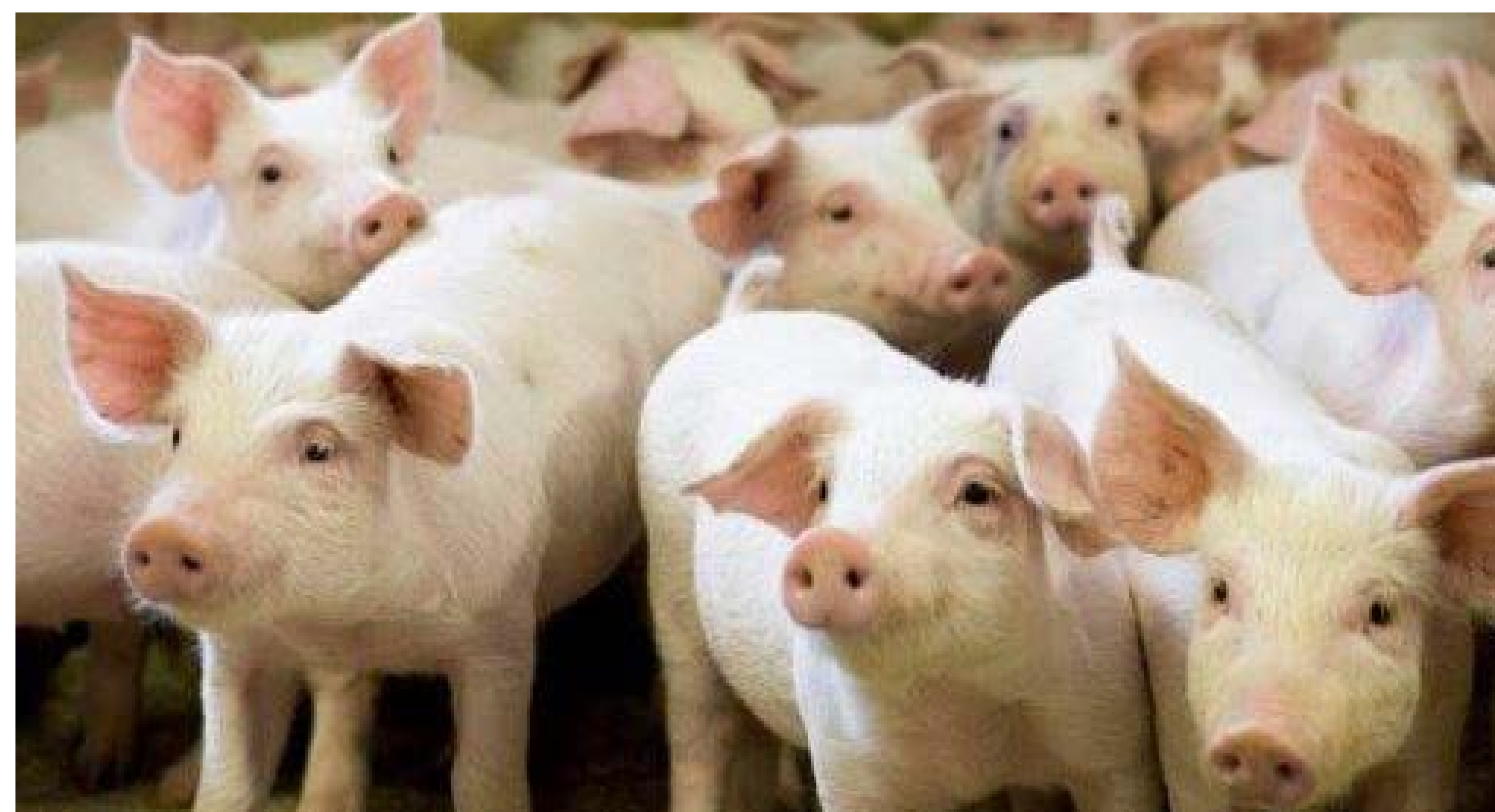
551 farms were included in a significant cluster in all four consecutive time periods.

All three analyses including covariates reduced the size of the persistent clusters.



Map

Map of the multivariate constant clusters. Individual ellipses indicate significant clusters for a specific time period ($p < 0.05$). Areas included in a significant cluster for each of the four consecutive time periods, define a persistent cluster, where n is the number of herds included.



Picture: Danish Pig Research Centre



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